

ABSTRACT

A method and system for heating a space includes circulating refrigerant in a closed loop system having a first heat exchanger and a second heat exchanger. The circulating step includes pressurizing liquid refrigerant to a first pressure and heating the liquid refrigerant in a third heat exchanger to form a refrigerant vapor. The method further includes compressing refrigerant by a compressor to a second pressure, wherein the compressor is at least partially driven by refrigerant vapor received from the third heat exchanger, and supplying one of the first and second heat exchangers with refrigerant from the compressor. The method further includes supplying refrigerant from the other of the first and second heat exchangers to the compressor and selectively supercharging the refrigerant supplied to the compressor from the other of the first and second heat exchangers.

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